

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A protection diode comprising:

a silicon substrate of a first conductive type;

~~a second conductive type impurity region formed by diffusing a second conductive type impurity of high concentration on a [[front]] surface of [[a]] the silicon substrate having a first conductive type impurity of low concentration;~~

~~a first conductive type impurity region formed by diffusing a first conductive type impurity of high concentration on the [[front]] surface of the silicon substrate so as to surround the second conductive type impurity region, the first and second conductive type impurity regions being separated from each other by a separation area having a predetermined width, the separation area including an entirety of the area between the first and second conductive type impurity regions with a predetermined width of a separation area apart from the second conductive type impurity region;~~

~~an interlayer dielectric layer formed so as to cover the [[front]] surface of the silicon substrate on which the first and second conductive type impurity regions are formed;~~

~~a first metal interconnect layer formed [[on]] over an entirety of the second~~

conductive type impurity region and the separation area through the interlayer dielectric layer and electrically connected to the second conductive type impurity region through a first connecting hole ~~disposed~~ formed in the interlayer dielectric layer; and

a second metal interconnect layer formed so as to ~~almost fully~~ cover the first conductive type impurity region through the interlayer dielectric layer and electrically connected to the first conductive type impurity region through a second connecting hole ~~disposed~~ formed in the interlayer dielectric layer.

Claim 2 (Currently Amended): The protection diode according to claim 1, wherein the first metal interconnect layer is formed so as to fully cover a border area between the first conductive type impurity region and the separation area through the interlayer dielectric layer.

Claim 3 (Currently Amended): A protection diode comprising:

a silicon substrate of a first conductive type;

a second conductive type impurity region formed ~~by diffusing a second conductive type impurity of high concentration~~ on a [[front]] surface of [[a]] the silicon substrate ~~having a first conductive type impurity of low concentration;~~

a first conductive type impurity region formed ~~by diffusing a first conductive type impurity of high concentration~~ on the [[front]] surface of the silicon substrate so as to surround the second conductive type impurity region [[with]] and being a predetermined

width of a separation area apart from the second conductive type impurity region;

an insulating film formed on almost an entirety of the separation area of the silicon substrate;

an electrode layer ~~formed in the front surface of the separation area of the silicon substrate through an~~ on the insulating film;

an interlayer dielectric layer formed so as to cover the ~~[[front]]~~ surface of the silicon substrate on which the first and second conductive type impurity regions and the electrode layer are formed;

a first metal interconnect layer formed on the second conductive type impurity region through the interlayer dielectric layer and electrically connected to the second conductive type impurity region and the electrode layer through a first connecting hole ~~disposed~~ formed in the interlayer dielectric layer; and

a second metal interconnect layer formed so as to ~~almost fully~~ cover the first conductive type impurity region through the interlayer dielectric layer and electrically connected to the first conductive type impurity region through a second connecting hole ~~disposed~~ formed in the interlayer dielectric layer.

Claim 4 (Currently Amended): The protection diode according to claim 3, wherein ~~the electrode is formed as a predetermined distance apart from the first conductive type impurity region~~ includes a high concentration impurity region and a low concentration impurity region surrounding the high concentration impurity region.

Claim 5 (New): The protection diode according to claim 1, wherein the silicon substrate has a well region of the first conductive type, and the first and second conductive type impurity regions are formed on the well region.

Claim 6 (New): The protection diode according to claim 3, wherein the silicon substrate has a well region of the first conductive type, and the first and second conductive type impurity regions are formed on the well region.

Claim 7 (New): The protection diode according to claim 1, further comprising an isolation region formed on the surface of the silicon substrate so as to surround the first and second conductive type impurity regions.

Claim 8 (New): The protection diode according to claim 3, further comprising an isolation region formed on the surface of the silicon substrate so as to surround the first and second conductive type impurity regions.

Claim 9 (New): The protection diode according to claim 1, wherein the first and second metal interconnect layers are formed from a same conductive layer.

Claim 10 (New): The protection diode according to claim 3, wherein the first and second metal interconnect layers are formed from a same conductive layer.

Claim 11 (New): The protection diode according to claim 1, wherein one of the first and second metal interconnect layers is connected to a fixed voltage, and another of the first and second metal interconnect layers is connected to an input terminal.

Claim 12 (New): The protection diode according to claim 3, wherein one of the first and second metal interconnect layers is connected to a fixed voltage, and another of the first and second metal interconnect layers is connected to an input terminal.

Claim 13 (New): A protection diode comprising:

- a semiconductor substrate of a first conductivity type;
- a first impurity region of a second conductivity type that is opposite to the first conductivity type;
- a separation area of the semiconductor substrate surrounding the first impurity region;
- a second impurity region of the first conductivity type, the second impurity region surrounding the separation area;
- an insulating layer formed on the first and second impurity regions and the separation area;
- an electrode layer formed on the insulating layer, the electrode layer substantially covering an entire area of the separation area;
- a first conductive pattern electrically connected to the first impurity region and the

electrode layer; and

a second conductive pattern electrically connected to the second impurity region.

Claim 14 (New): The protection diode according to claim 13, wherein an inversion layer is formed on a surface of the separation area when a static charge is applied to the first conductive pattern.

Claim 15 (New): The protection diode according to claim 13, wherein one of the first and second conductive patterns is connected to a fixed voltage, and another of the first and second conductive patterns is connected to an input terminal.

Claim 16 (New): The protection diode according to claim 13, wherein the semiconductor substrate has a well region of the first conductivity type, and the first and second impurity regions are formed on the well region.

Claim 17 (New): The protection diode according to claim 13, wherein the first and second conductive patterns are formed from a same conductive layer.

Claim 18 (New): The protection diode according to claim 17, wherein the electrode layer and the conductive layer of the first and second conductive patterns are different layers.

Claim 19 (New): The protection diode according to claim 13, further comprising an isolation region formed on a surface of the semiconductor substrate so as to surround the first and second impurity regions.